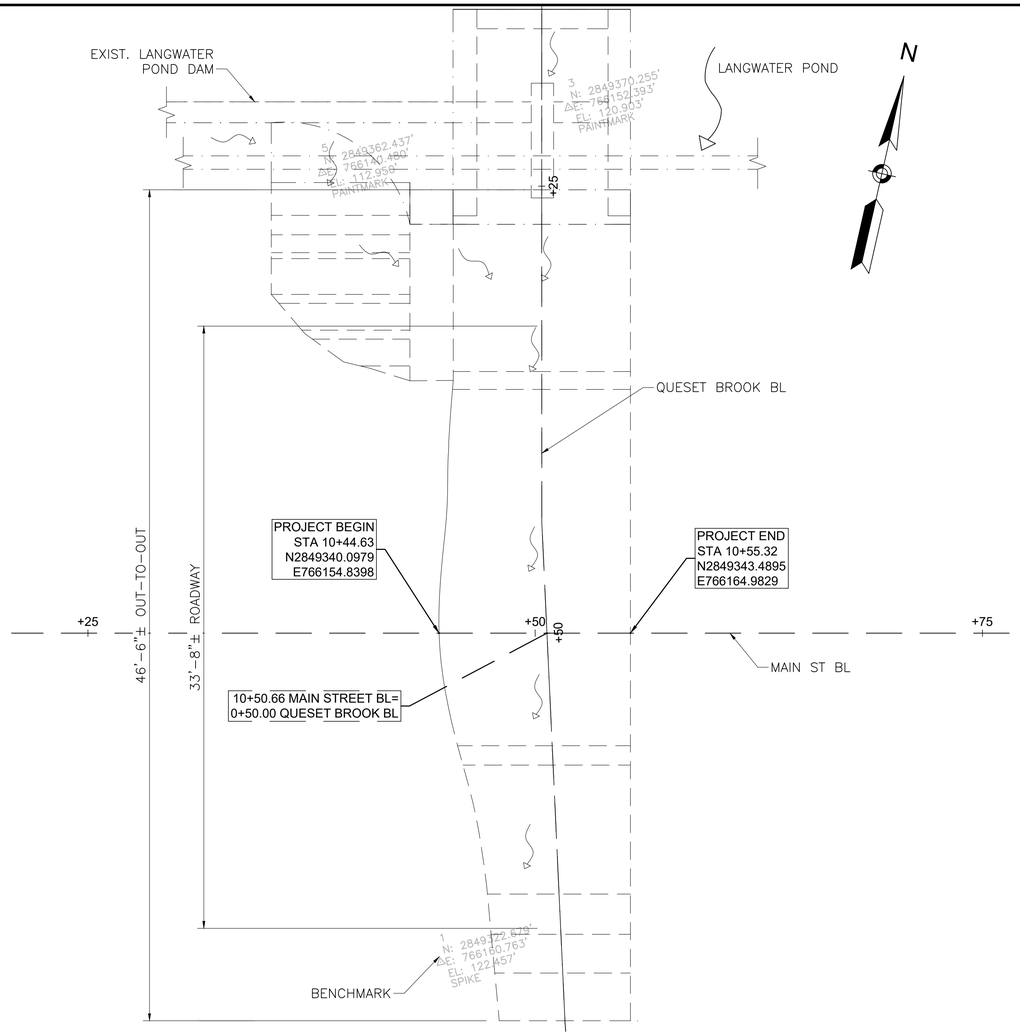
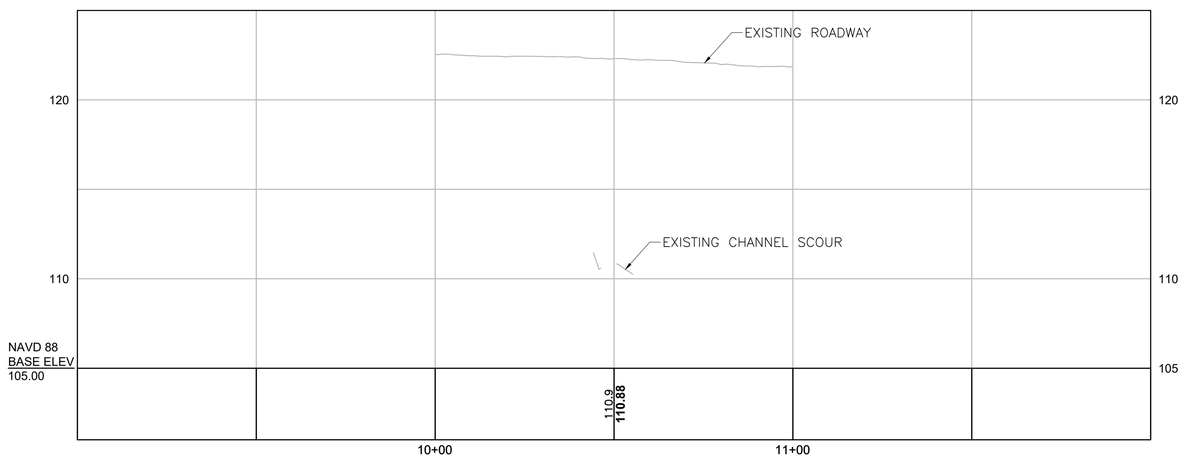


KEY PLAN

SCALE: 1/4" = 1'-0"



PROFILE – MAIN STREET

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1' = 4'

INDEX OF DRAWINGS

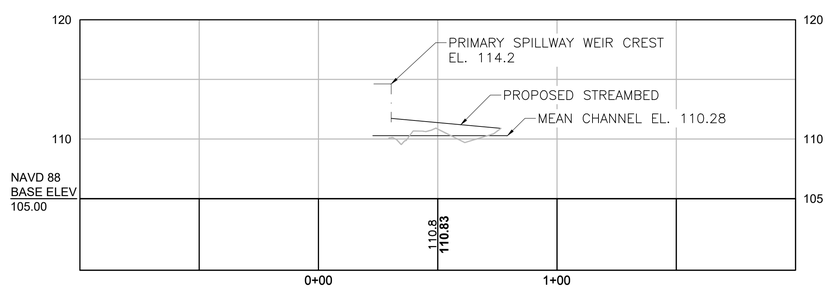
1. KEY PLAN, LOCUS & PROFILE
2. GENERAL NOTES
3. EXISTING CONDITIONS
4. SCOUR REPAIR EAST ABUTMENT
5. SCOUR REPAIR WEST ABUTMENT
6. PROPOSED CONDITIONS
7. JOINT REPAIR DETAILS
8. CONSTRUCTION DETAILS

LOCUS

SCALE: 1" = 2000'

QUANTITIES

NO.	ITEM	UNIT	QUANTITY
143.	CHANNEL EXCAVATION	CY	22
156.5	CRUSHED STONE FOR FILTER BLANKET	CY	4
250.04	4 INCH POLYVINYL CHLORIDE SANITARY SEWER PIPE	FT	116
698.3	GEOTEXTILE FABRIC FOR SEPARATION	SY	95
748	MOBILIZATION	LS	1
767.121	SEDIMENT CONTROL BARRIER	FT	84
850.	TEMPORARY TRAFFIC MANAGEMENT	LS	1
908.01	MASONRY JOINT REPAIR	CF	121
910.1	STEEL REINFORCEMENT FOR STRUCTURES - EPOXY COATED	LB	900
988.3	CHANNEL PAVING - GROUT FILLED BAGS	CY	30
991.1	CONTROL OF WATER - STRUCTURE NO. E06022	LS	1



PROFILE – QUESET BROOK

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1' = 8'

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
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MASS. GEN. LAWS CH 85 S 35
DISTRICT BRIDGE ENGINEER — DATE 5/2/2025

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DANIEL S. CROVO
NO. 35441
CIVIL
REGISTERED PROFESSIONAL ENGINEER
5/1/2025

SUBSTRUCTURE REPAIR

TOWN OF EASTON

SUBSTRUCTURE REPAIR FOR EASTON E-06-022 (94W)

MAIN STREET OVER QUESET BROOK

KEY PLAN, LOCUS, & PROFILE

GENERAL NOTES:

1. THE WORK AND MATERIAL SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE 2024 MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
2. THE CONTRACTOR SHALL SUBMIT A WATER CONTROL PLAN DEFINING AND DETAILING THE METHODS FOR CONTROL OF WATER TO THE TOWN AND THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
3. THE PLANS OF THE EXISTING BRIDGE E-6-022 DO NOT EXIST. DIMENSIONS SHOWN ARE APPROXIMATE AND ARE FOR INFORMATION PURPOSES. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS.
4. EXISTING CONDITIONS SHOWN ARE BASED ON MASSDOT FIELD INSPECTION REPORTS.

PLAN REVISIONS:

IF THERE ARE REVISIONS TO APPROVED PLANS, THE CONTRACTOR SHALL SUBMIT THESE CHANGES TO THE ENGINEER OF RECORD AND MassDOT FOR THE REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

BENCHMARK:

ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING LINE AND GRADE ON THE PROJECT. IF THE EXISTING CONTROL POINTS NEED TO BE REESTABLISHED, THIS SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

BENCHMARK:

STATION #1: SPIKE SET
N: 2849322.68
E: 766160.76
ELEV = 122.46

UTILITIES:

CONTRACTOR SHALL LOCATE AND PROTECT FROM DAMAGE ALL EXISTING UTILITIES. EXISTING OVERHEAD WIRES MAY BE TEMPORARILY RELOCATED OR SHIELDED AS COORDINATED AND APPROVED BY RESPONSIBLE UTILITY OWNERS.

SCALES:

SCALES AS NOTED ON PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. FOR ½ SIZE PRINTS DIVIDE SCALE BY TWO.

SURVEY NOTES:

1. THE SURVEY WAS PERFORMED BY DAWOOD USING THE TRIMBLE S6 TOTAL STATION ON JUNE 16, 2023.
2. ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BASED ON THE KEYNETGPS VIRTUAL REFERENCE SYSTEM (VRS).
3. THE LOCATIONS AND INFORMATION ABOUT UNDERGROUND PIPES, UTILITIES, OR OTHER STRUCTURES ARE COMPILED FROM AVAILABLE RECORD DATA AND VISIBLE FIELD EVIDENCE AND ARE NOT REPRESENTED AS BEING EXACT OR COMPLETE. PRIOR TO BEGINNING EXCAVATION, THE EXCAVATOR SHALL GIVE ADEQUATE ADVANCE NOTICE TO THE DIG SAFE CENTER, THE MUNICIPAL AND/OR STATE PUBLIC WORKS DEPARTMENT, AND PRIVATE UTILITY COMPANIES, TO ALLOW FOR FIELD LOCATION OF FACILITIES IN THE VICINITY.
4. IF CONTRACTOR OBSERVES ANY FIELD CONDITIONS WHICH VARY SIGNIFICANTLY FROM WHAT IS SHOWN ON THESE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR RESOLUTION OF THE CONFLICTING INFORMATION.
5. THE CONTRACTOR SHALL RECORD TIE MEASUREMENTS, DEPTHS, DIMENSIONS, MATERIALS, FIELD CONDITIONS, AND OTHER PERTINENT DATA ABOUT ALL UNDERGROUND PIPES, UTILITIES, AND STRUCTURES ENCOUNTERED DURING THE WORK, BOTH EXISTING AND CONSTRUCTED. CONTRACTOR SHALL SUBMIT RECORD DRAWINGS WITH THIS INFORMATION TO THE OWNER AND ENGINEER PRIOR TO COMPLETION OF THE WORK.
6. CONTRACTOR SHALL IMMEDIATELY REPORT ANY DAMAGE TO EXISTING PIPES, UTILITIES, OR STRUCTURES TO THE OWNER AND ENGINEER, AND OBTAIN DIRECTIONS AS TO REPAIR, REPLACE, OR ABANDONMENT.

EXISTING CONDITIONS:

DIMENSIONS SHOWN ARE TAKEN FROM SURVEY. THE ORIGINAL DESIGN DRAWINGS ARE NOT AVAILABLE AND VARIOUS FIELD MEASUREMENTS ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE AND NOT ORDER ANY MATERIAL OR COMMENCE IN ANY FABRICATION UNTIL HE HAS MADE THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE AND THE EXTENT ON THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.

TRAFFIC:

TWO LANES OF TRAFFIC WILL BE MAINTAINED DURING NON-WORK HOURS. WHEN NECESSARY DURING WORK HOURS, A SINGLE LANE OF ALTERNATING TRAFFIC SHALL BE MAINTAINED.

MATERIALS:

SEE SPECIAL PROVISIONS FOR GROUT AND GROUT BAGS.

#3 EPOXY COATED REINFORCING STEEL BARS SHALL CONFORM TO AASHTO M31, GRADE 60 AND SHALL BE FIELD BENT TO FOLLOW MASONRY JOINT ALIGNMENT.

TEMPORARY WATER CONTROL:

TEMPORARY WATER CONTROL DESIGN DATA (AUGUST FLOWS)	
DESIGN FLOOD DISCHARGE (C.F.S)	1.30
DESIGN FLOOD FREQUENCY (YEARS)	2
DESIGN FLOOD VELOCITY (F.P.S)	9.68
DESIGN FLOOD ELEVATION (FEET)	110.31

1. TEMPORARY WATER CONTROL SHALL BE ESTABLISHED TO PERMIT FOUNDATION CONSTRUCTION IN THE DRY.
2. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL TO THE ENGINEER OF RECORD A PROPOSED WATER DIVERSION AND DEWATERING PLAN DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL PERFORM ALL PROPOSED WORK IN COMPLIANCE WITH THE ORDER OF CONDITION ISSUES BY THE EASTON CONSERVATION COMMISSION AND THE U.S. ARMY CORPS OF ENGINEERS GENERAL PERMIT. SEE SPECIAL PROVISIONS FOR SUBMITTAL REQUIREMENTS.
2. THE CONTRACTOR SHALL DISPOSE OF ANY UNSUITABLE OR EXCESS EARTH MATERIAL. EXCAVATE FROM THE SITE IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.
3. THE CONTRACTOR SHALL USE SMALL HAND EQUIPMENT WITHIN STREAM AND SHALL NOT OBSTRUCT MORE THAN 50% OF FLOW THROUGH THE STREAM CHANNEL.
4. THE HEIGHT OF THE TEMPORARY WATER CONTROL SYSTEM SHALL BE AS REQUIRED TO DIVERT THE LOW SEASONAL FLOW TO THE OTHER SIDE OF THE BRIDGE OPENING DURING CONSTRUCTION. THE SANDBAG WATER CONTROL SYSTEM SHOWN IS CONCEPTUAL. THE CONTRACTOR SHALL DESIGN AND SUBMIT PROPOSED WATER CONTROL SYSTEM FOR REVIEW. SHOULD HEAVY RAINFALL BE PREDICTED TO OCCUR DURING CONSTRUCTION, ALL CONSTRUCTION EQUIPMENT, TOOLS, AND LOOSE SEDIMENT LOCATED WITHIN THE WATER CONTROL SYSTEM SHALL BE REMOVED IN ADVANCE OF WATER OVERTOPPING THE SANDBAGS. PREVENTING SEDIMENT FROM ENTERING THE THE WATER COLUMN IS REQUIRED.

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SUBSTRUCTURE REPAIR

TOWN OF EASTON

SUBSTRUCTURE REPAIR FOR EASTON E-06-022 (94W)
MAIN STREET OVER QUESET BROOK

GENERAL NOTES

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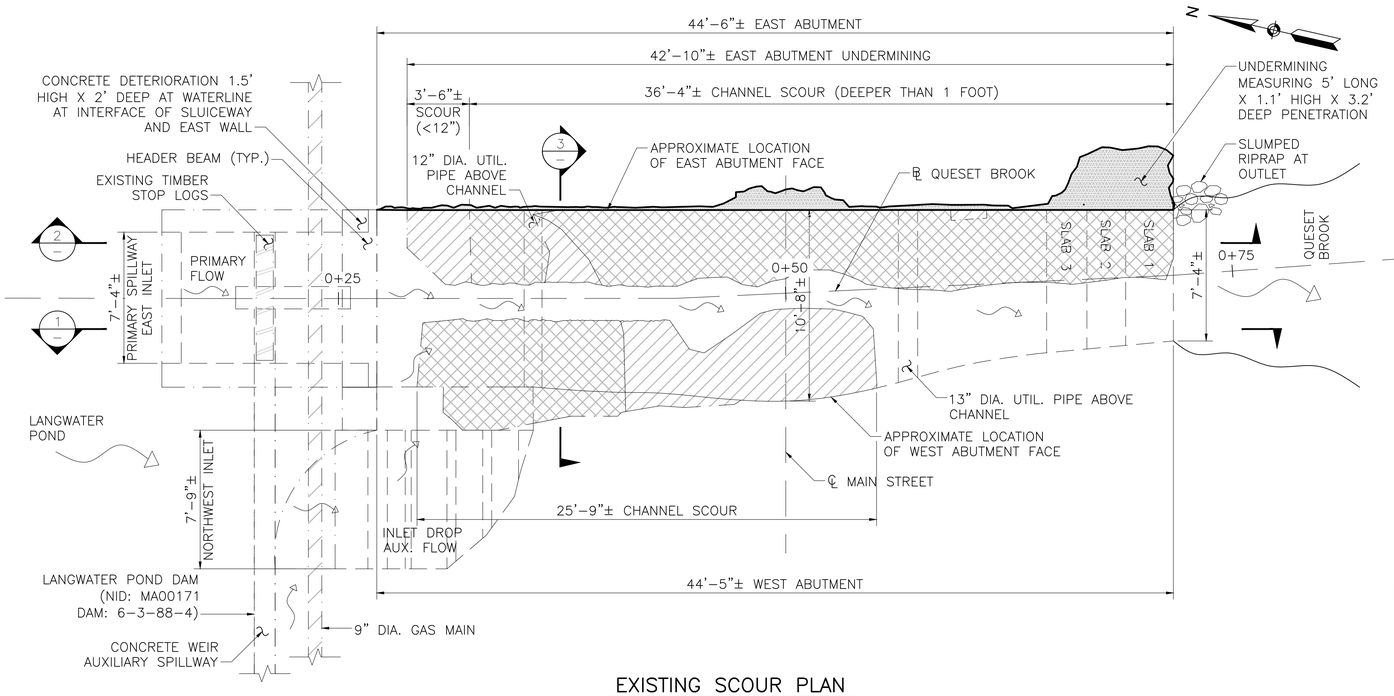
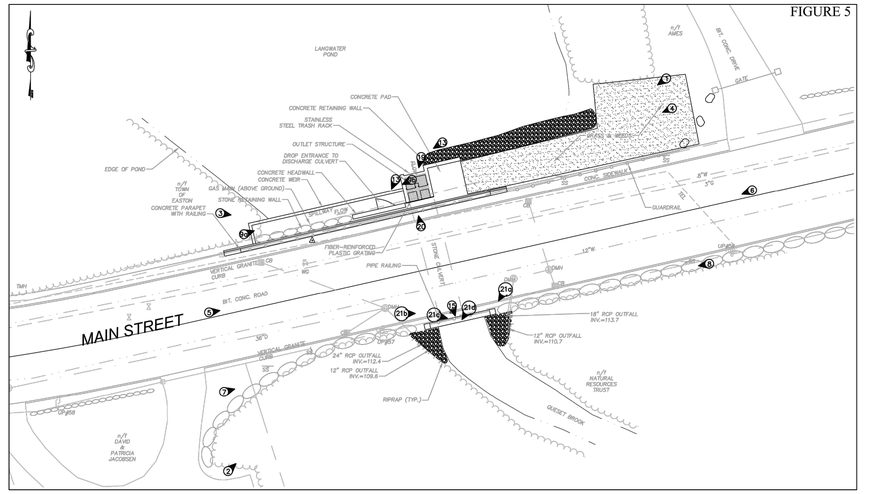


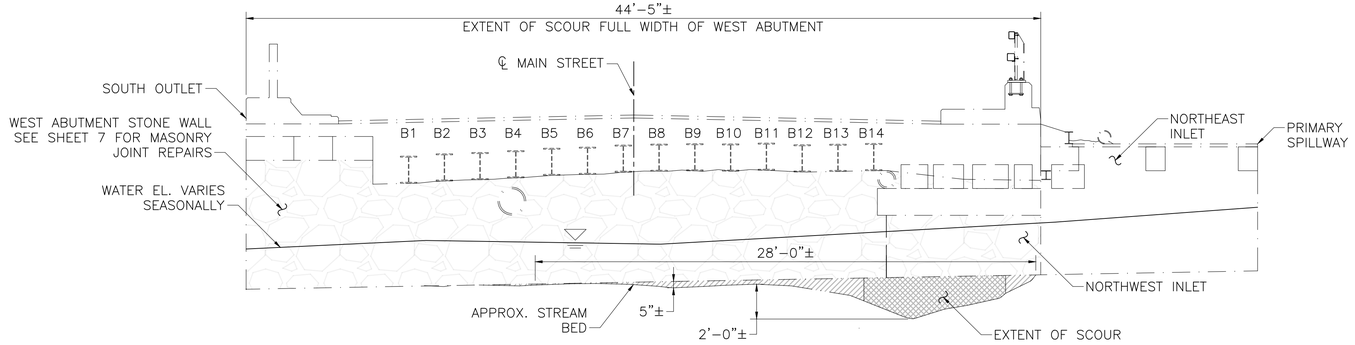
EXISTING SCOUR PLAN

SCALE: $\frac{1}{4}$" = 1'-0"



DATA SITE PLAN FROM LANGWATER POND DAM INSPECTION REPORT DATED 6/29/2018

SCALE: 1" = 300'

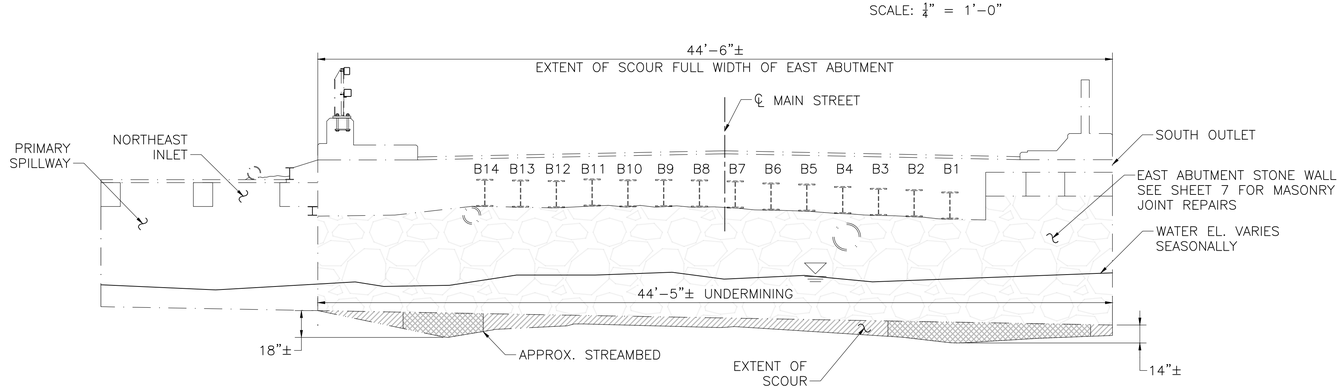

44'-5"± EXTENT OF SCOUR FULL WIDTH OF WEST ABUTMENT
℄ MAIN STREET
SOUTH OUTLET
WEST ABUTMENT STONE WALL SEE SHEET 7 FOR MASONRY JOINT REPAIRS
WATER EL. VARIES SEASONALLY
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14
NORTHEAST INLET
PRIMARY SPILLWAY
28'-0"±
APPROX. STREAM BED
5"±
2'-0"±
NORTHWEST INLET
EXTENT OF SCOUR

SECTION 1 EXISTING WEST ABUTMENT

SCALE: $\frac{1}{4}$" = 1'-0"

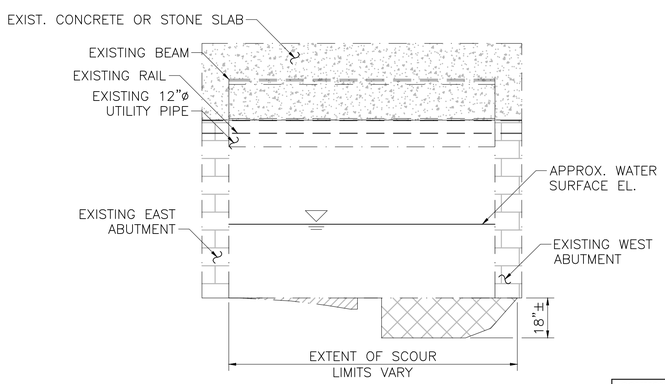
LEGEND

- DENOTES EXISTING CHANNEL SCOUR LESS THAN 1 FOOT
- DENOTES EXISTING CHANNEL SCOUR DEEPER THAN 1 FOOT
- DENOTES EXISTING UNDERMINING OF ABUTMENTS – LIMITS APPROXIMATE


44'-6"± EXTENT OF SCOUR FULL WIDTH OF EAST ABUTMENT
℄ MAIN STREET
PRIMARY SPILLWAY
NORTHEAST INLET
SOUTH OUTLET
B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1
EAST ABUTMENT STONE WALL SEE SHEET 7 FOR MASONRY JOINT REPAIRS
WATER EL. VARIES SEASONALLY
44'-5"± UNDERMINING
18"±
APPROX. STREAMBED
EXTENT OF SCOUR
14"±

SECTION 2 EXISTING EAST ABUTMENT

SCALE: $\frac{1}{4}$" = 1'-0"



SECTION 3 EXISTING CHANNEL SCOUR

SCALE: $\frac{3}{8}$" = 1'-0"

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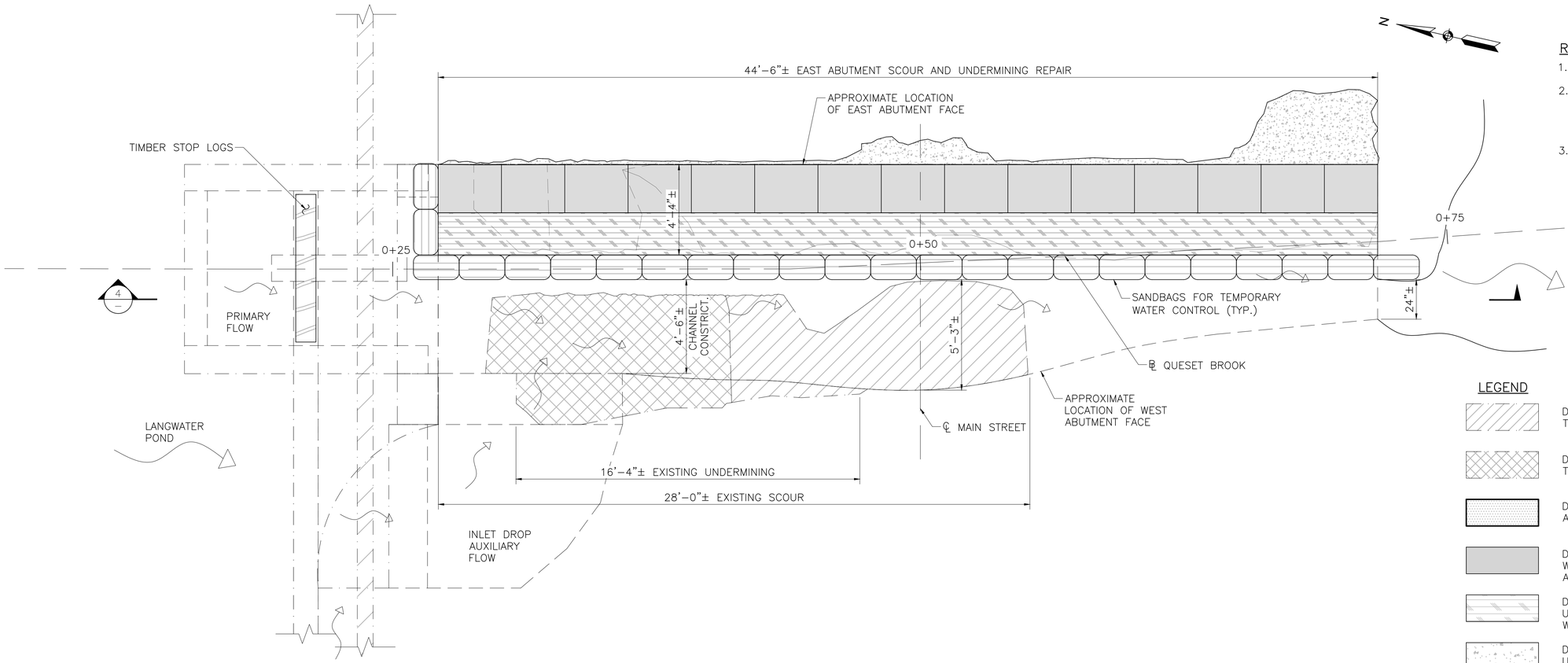
SUBSTRUCTURE REPAIR

TOWN OF EASTON

SUBSTRUCTURE REPAIR FOR EASTON E-06-022 (94W)
MAIN STREET OVER QUESET BROOK

EXISTING CONDITIONS



STAGE 1: PROPOSED EAST ABUTMENT SCOUR REPAIR PLAN

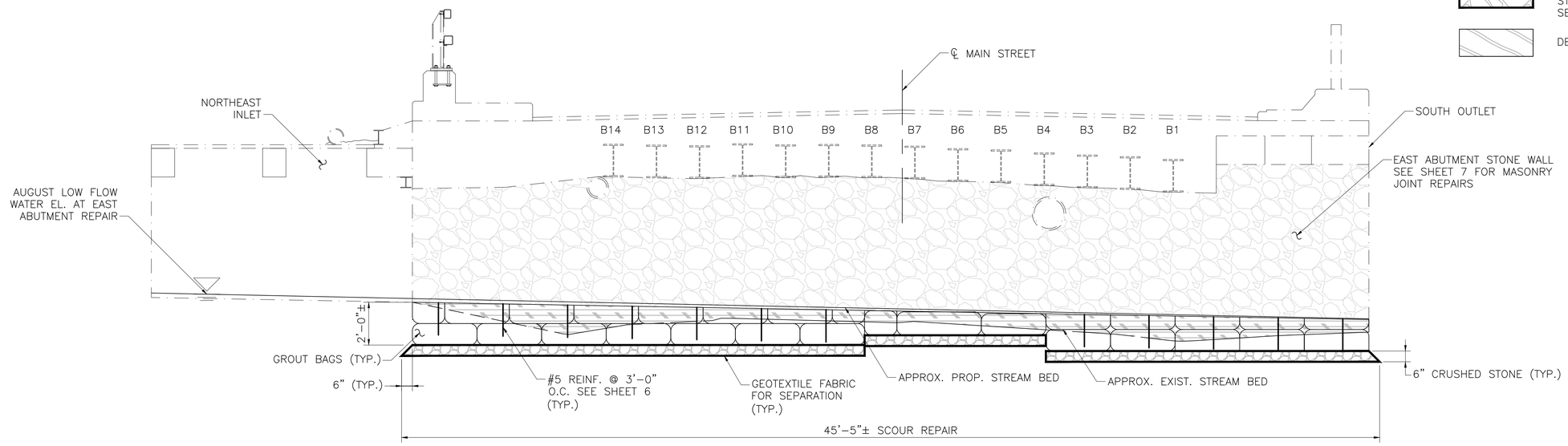
SCALE: $\frac{3}{8}$" = 1'–0"

REPAIR PLAN NOTES:

1. UTILITY PIPES AND HEADER BEAMS NOT SHOWN FOR CLARITY.
2. TEMPORARY CONTROL OF WATER SYSTEM SHOWN IS CONCEPTUAL. CONTRACTOR SHALL DEVELOP HIS/HER SYSTEM OF CONTROL OF WATER AND SUBMIT FOR APPROVAL.
3. EXISTING UNDERWATER INSPECTION REPORTS INDICATE THAT THERE ARE EXISTING TIMBER BEAMS ON THE MUDLINE THAT SUPPORT THE ABUTMENTS. THESE BEAMS RUN PERPENDICULAR TO THE ABUTMENTS AND ARE SPACED AT 3.5 FEET ON CENTER. SOME OF THE BEAMS ON THE WEST SIDE OF THE CHANNEL ARE UNDERMINED.

LEGEND

- DENOTES EXISTING CHANNEL SCOUR LESS THAN 1 FOOT
- DENOTES EXISTING CHANNEL SCOUR DEEPER THAN 1 FOOT
- DENOTES EXISTING UNDERMINING OF ABUTMENTS – LIMITS APPROXIMATE
- DENOTES PROPOSED FABRIC BAGS FILLED WITH GROUT WITH ANTI–WASHOUT ADMIXTURE AT ABUTMENT FACE
- DENOTES PROPOSED SCOUR REPAIRED USING FABRIC BAGS FILLED WITH GROUT WITH ANTI–WASHOUT ADMIXTURE
- DENOTES PROPOSED UNDERMINING REPAIRED USING FABRIC BAGS FILLED WITH GROUT WITH ANTI–WASHOUT ADMIXTURE
- DENOTES TEMPORARY WATER CONTROL SYSTEM
- DENOTES PROPOSED 6" OF CRUSHED STONE WITH GEOTEXTILE FABRIC FOR SEPARATION
- DENOTES PROPOSED TIMBER STOP LOGS


℄ MAIN STREET
NORTHEAST INLET
B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1
SOUTH OUTLET
EAST ABUTMENT STONE WALL SEE SHEET 7 FOR MASONRY JOINT REPAIRS
AUGUST LOW FLOW WATER EL. AT EAST ABUTMENT REPAIR
2'–0"±
GROUT BAGS (TYP.)
6" (TYP.)
#5 REINF. @ 3'–0" O.C. SEE SHEET 6 (TYP.)
GEOTEXTILE FABRIC FOR SEPARATION (TYP.)
APPROX. PROP. STREAM BED
APPROX. EXIST. STREAM BED
6" CRUSHED STONE (TYP.)
45'–5"± SCOUR REPAIR

SECTION 4: PROPOSED EAST ABUTMENT SCOUR REPAIRS

SCALE: $\frac{3}{8}$" = 1'–0"

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SUBSTRUCTURE REPAIR

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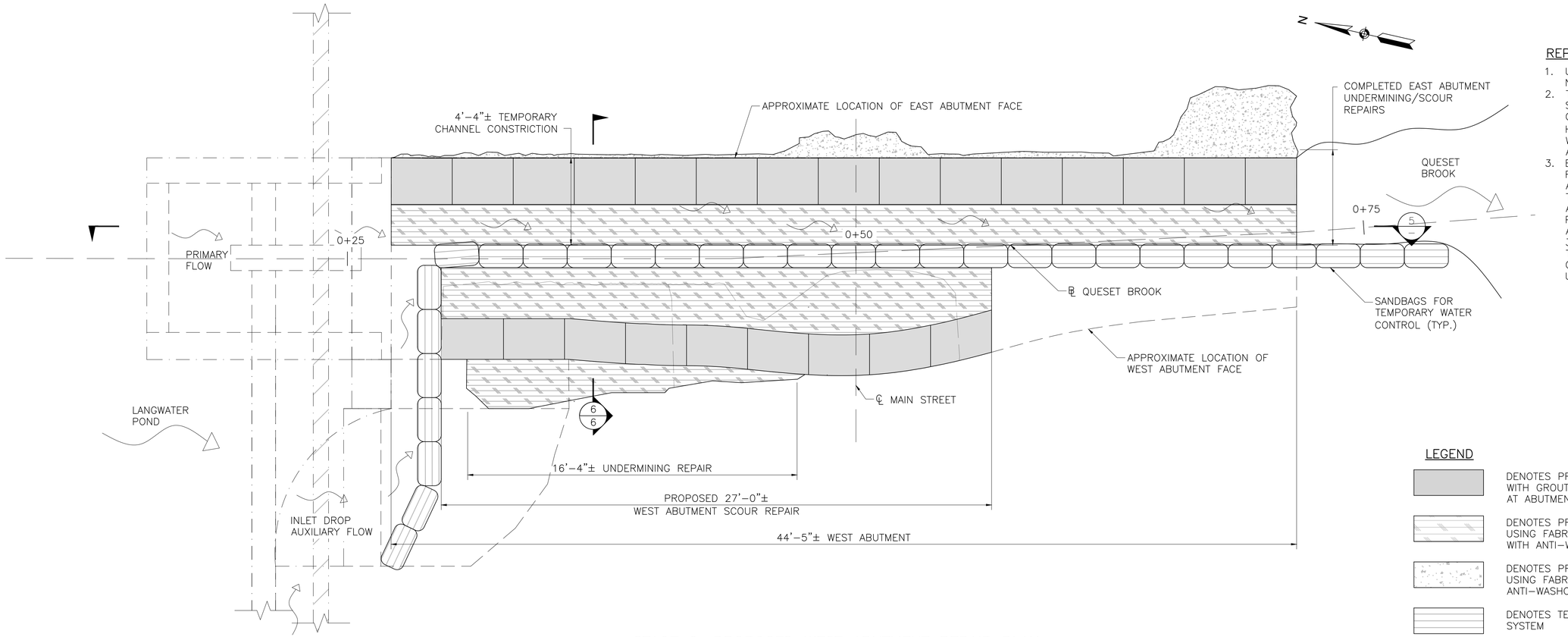
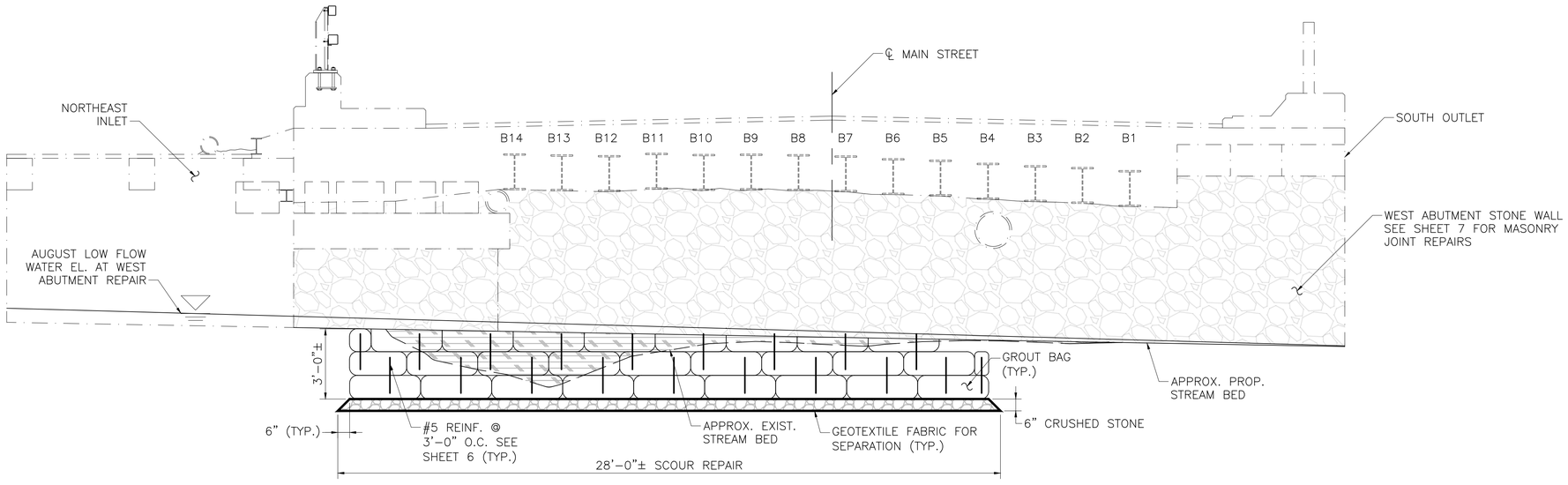
SUBSTRUCTURE REPAIR FOR EASTON E–06–022 (94W)
MAIN STREET OVER QUESET BROOK

SCOUR REPAIR EAST ABUTMENT



STAGE 2: PROPOSED WEST ABUTMENT REPAIR PLAN

SCALE: 3/8" = 1'–0"


℄ MAIN STREET
NORTHEAST INLET
B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1
SOUTH OUTLET
WEST ABUTMENT STONE WALL SEE SHEET 7 FOR MASONRY JOINT REPAIRS
AUGUST LOW FLOW WATER EL. AT WEST ABUTMENT REPAIR
3'–0"±
GROUT BAG (TYP.)
APPROX. PROP. STREAM BED
6" (TYP.)
#5 REINF. @ 3'–0" O.C. SEE SHEET 6 (TYP.)
APPROX. EXIST. STREAM BED
GEOTEXTILE FABRIC FOR SEPARATION (TYP.)
6" CRUSHED STONE
28'–0"± SCOUR REPAIR

SECTION 5: PROPOSED WEST ABUTMENT REPAIR

SCALE: 3/8" = 1'–0"

REPAIR PLAN NOTES:

1. UTILITY PIPES AND HEADER BEAMS NOT SHOWN FOR CLARITY.
2. TEMPORARY CONTROL OF WATER SYSTEM SHOWN IS CONCEPTUAL. CONTRACTOR SHALL DEVELOP HIS/HER SYSTEM OF CONTROL OF WATER AND SUBMIT FOR APPROVAL.
3. EXISTING UNDERWATER INSPECTION REPORTS INDICATE THAT THERE ARE EXISTING TIMBER BEAMS ON THE MUDLINE THAT SUPPORT THE ABUTMENTS. THESE BEAMS RUN PERPENDICULAR TO THE ABUTMENTS AND ARE SPACED AT 3.5 FEET ON CENTER. SOME OF THE BEAMS ON THE WEST SIDE OF THE CHANNEL ARE UNDERMINED.

LEGEND

- DENOTES PROPOSED FABRIC BAGS FILLED WITH GROUT WITH ANTI–WASHOUT ADMIXTURE AT ABUTMENT FACE
- DENOTES PROPOSED SCOUR REPAIRED USING FABRIC BAGS FILLED WITH GROUT WITH ANTI–WASHOUT ADMIXTURE
- DENOTES PROPOSED UNDERMINING REPAIRED USING FABRIC BAGS FILLED WITH GROUT WITH ANTI–WASHOUT ADMIXTURE
- DENOTES TEMPORARY WATER CONTROL SYSTEM
- DENOTES PROPOSED 6" OF CRUSHED STONE WITH GEOTEXTILE FABRIC FOR SEPARATION

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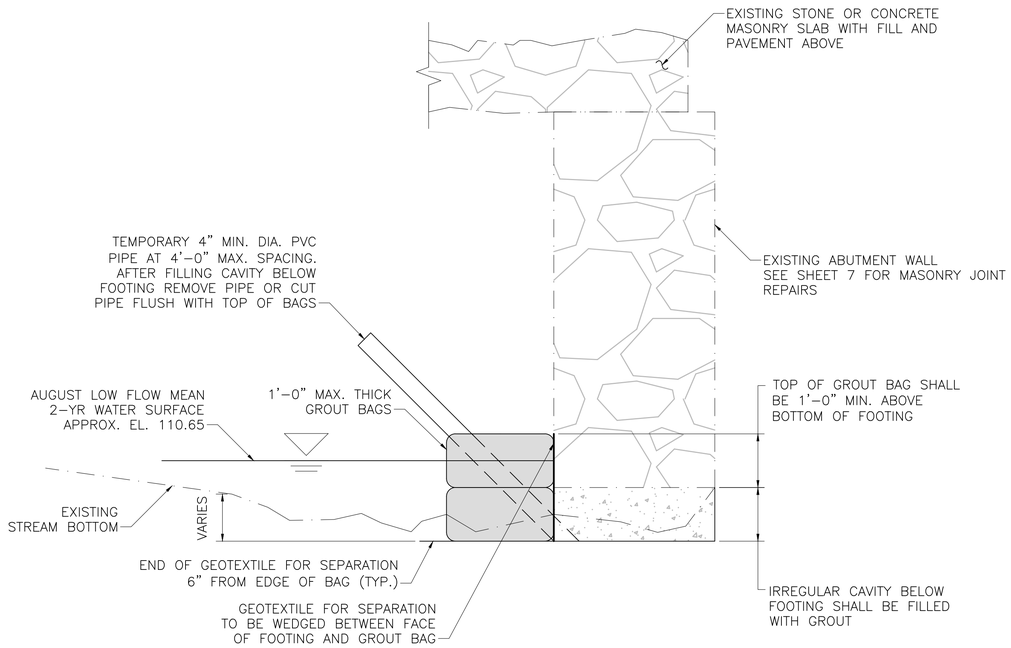
SUBSTRUCTURE REPAIR

TOWN OF EASTON

SUBSTRUCTURE REPAIR FOR EASTON E–06–022 (94W)
MAIN STREET OVER QUESET BROOK

SCOUR REPAIR WEST ABUTMENT

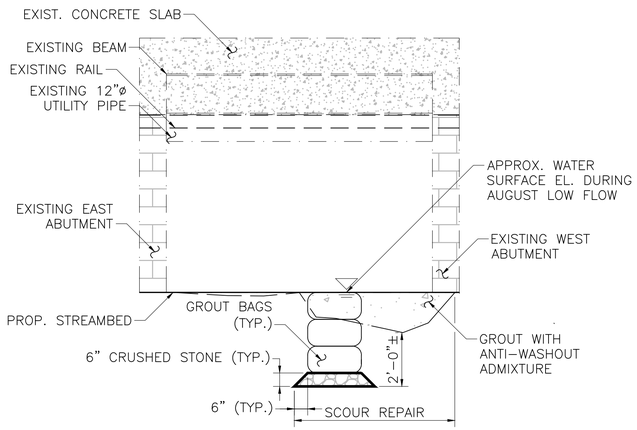

EXISTING STONE OR CONCRETE MASONRY SLAB WITH FILL AND PAVEMENT ABOVE
TEMPORARY 4" MIN. DIA. PVC PIPE AT 4'-0" MAX. SPACING. AFTER FILLING CAVITY BELOW FOOTING REMOVE PIPE OR CUT PIPE FLUSH WITH TOP OF BAGS
EXISTING ABUTMENT WALL SEE SHEET 7 FOR MASONRY JOINT REPAIRS
AUGUST LOW FLOW MEAN 2-YR WATER SURFACE APPROX. EL. 110.65
1'-0" MAX. THICK GROUT BAGS
TOP OF GROUT BAG SHALL BE 1'-0" MIN. ABOVE BOTTOM OF FOOTING
EXISTING STREAM BOTTOM
VARIES
END OF GEOTEXTILE FOR SEPARATION 6" FROM EDGE OF BAG (TYP.)
GEOTEXTILE FOR SEPARATION TO BE WEDGED BETWEEN FACE OF FOOTING AND GROUT BAG
IRREGULAR CAVITY BELOW FOOTING SHALL BE FILLED WITH GROUT

SECTION THROUGH ABUTMENT

SCALE: $\frac{3}{4}$" = 1'-0"

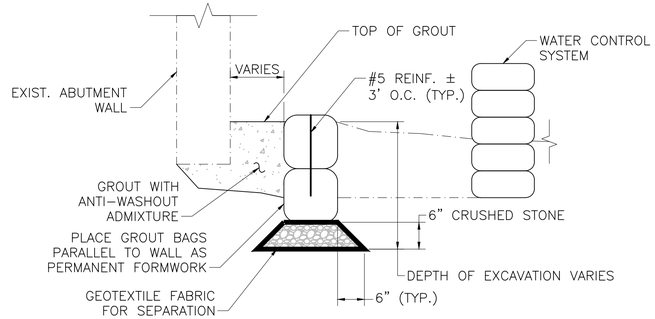
SCOUR REPAIR NOTES:

1. THE STREAM BED SHALL BE EXCAVATED AND LEVELED TO THE LIMITS SHOWN IN THE DETAILS.
2. THE WATER CONTROL SYSTEM SHALL BE PLACED IN PHASES IN FRONT OF THE WEST AND EAST ABUTMENTS AS A CONTROL OF WATER SYSTEM TO TEMPORARILY DIVERT FLOW TO THE OTHER SIDE OF THE BRIDGE OPENING DURING CONSTRUCTION.
3. DEPENDING ON THE DEPTH OF THE UNDERMINING, PLACE ONE GROUT BAG OR STACK SEVERAL LAYERS OF GROUT BAGS ALONG THE FACE OF THE ABUTMENT IN FRONT OF THE UNDERMINED AREA. IF BAGS ARE STACKED, BAGS IN SUCCESSIVE ROWS AND TIERS SHALL BE STAGGERED. PLACE ADDITIONAL GROUT BAGS TO LIMITS SHOWN.
4. ONCE THE VENT/FILL PIPES HAVE BEEN INSTALLED AND THE BAGS ARE FILLED, PUMP THE GROUT INTO THE UNDERMINED AREA UNTIL GROUT APPEARS IN THE TOP OF ADJACENT VENT PIPES. CUT OR REMOVE THE VENT/FILL PIPES FLUSH WITH THE TOP OF THE BAGS AFTER THE PUMPING OPERATION IS COMPLETE. GROUT MUST NOT BE ALLOWED TO FLOW INTO THE BROOK OR ESCAPE BEYOND THE WINGWALLS.
5. ADEQUATE VENTING OF THE WATER TO BE DISPLACED IN THE UNDERMINED AREA IS IMPORTANT. THE WATER MUST BE ABLE TO ESCAPE WHEN IT IS DISPLACED BY THE GROUT PUMPED INTO THE CAVITY. A 4 FOOT MAXIMUM SPACING OF THE VENT/FILL PIPES IS RECOMMENDED.
6. IT IS IMPORTANT TO KEEP THE NOZZLE BURIED IN THE GROUT DURING THE PUMPING. THIS IS TO REDUCE THE AMOUNT OF MIXING OF THE GROUT AND THE WATER TO BE DISPLACED.
7. CHANNEL SHALL BE EXCAVATED AND RE-GRADED TO THE LIMITS SHOWN ON THE PLANS PRIOR TO INSTALLATION OF GEOTEXTILE FABRIC.
8. CLEAN OUT UNSTABLE MATERIAL ALONG THE BOTTOM OF THE UNDERMINED AREA PRIOR TO FILLING WITH GROUT.
9. IT IS PREFERABLE TO PLACE A SINGLE LAYER OF GROUT BAGS INSTEAD OF STACKING. PLACE FILTER FABRIC UNDER ALL GROUT BAGS INCLUDING A SINGLE LAYER OF BAGS.
10. IF BAGS ARE STACKED, OVERLAP THE JOINTS OF THE PRECEDING LAYER.
11. THE BAGS SHALL BE POSITIONED AND FILLED SO THAT THEY ABUT TIGHTLY TO EACH OTHER. NO OPEN GAPS SHALL BE PERMITTED.
12. IF POSSIBLE, BAGS SHOULD BE PLACED SO THAT THE TOP OF THE BAG IS AT OR BELOW THE STREAM BOTTOM WHERE SCOUR HASN'T OCCURED. (WHEN FILLING A SCOUR HOLE, KEEP THE TOP OF THE BAG AT OR BELOW THE STREAM BOTTOM).
13. GROUT BAGS SHOULD BE NO LARGER THAN 3 FEET WIDE, 4 FEET LONG AND 1 FOOT THICK. SEAMS SHALL BE FOLDED AND DOUBLE STITCHED.
14. DO NOT OVERFILL THE BAGS OR ALLOW GROUT TO BE POURED BETWEEN THE SEAMS OF TWO BAGS.
15. PLACE GEOTEXILE FABRIC FOR SEPARATION AND CRUSHED STONE PER DETAILS SHOWN. GEOTEXTILE FABRIC SHALL BE DONE IN STAGES. THE CONTRACTOR SHALL INSTALL MEASURES TO DIVERT THE RIVER FLOW FROM THE STAGE UNDER CONSTRUCTION.
16. RESTORE THE STREAM BED TO ITS EXISTING CONDITION UTILIZING THE SOIL FROM THE STREAM BED EXCAVATION.
17. ALL TOP GROUT BAGS SHALL BE CONNECTED TO UNDERLYING BAGS USING EPOXY COATED #5 DOWELS SPACED NO MORE THAN 3 FEET ON CENTER.



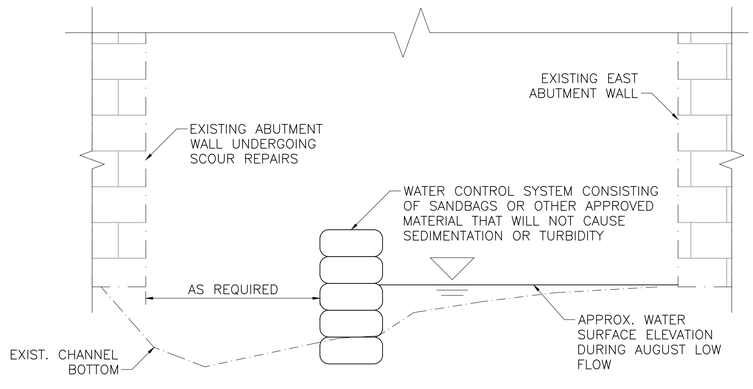
SECTION 6/5 PROPOSED CHANNEL SCOUR REPAIR

SCALE: $\frac{3}{8}$" = 1'-0"



GROUT BAG DETAIL

SCALE: $\frac{3}{4}$" = 1'-0"


EXISTING EAST ABUTMENT WALL
EXISTING ABUTMENT WALL UNDERGOING SCOUR REPAIRS
WATER CONTROL SYSTEM CONSISTING OF SANDBAGS OR OTHER APPROVED MATERIAL THAT WILL NOT CAUSE SEDIMENTATION OR TURBIDITY
AS REQUIRED
APPROX. WATER SURFACE ELEVATION DURING AUGUST LOW FLOW
EXIST. CHANNEL BOTTOM

PROPOSED TEMPORARY CONTROL OF WATER

SCALE: $\frac{3}{4}$" = 1'-0"

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
APPROVED UNDER PROVISIONS OF MASS. GEN. LAWS CH 85 S 35
DISTRICT BRIDGE ENGINEER — DATE: 5/2/2025

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781-355-7101 (FAX)
GILL ENGINEERING

Plotted on 30-Apr-2025 2:50 PM
E06022_BRIDGE_FABRIC BAGS.dwg

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REGISTERED PROFESSIONAL ENGINEER — DATE

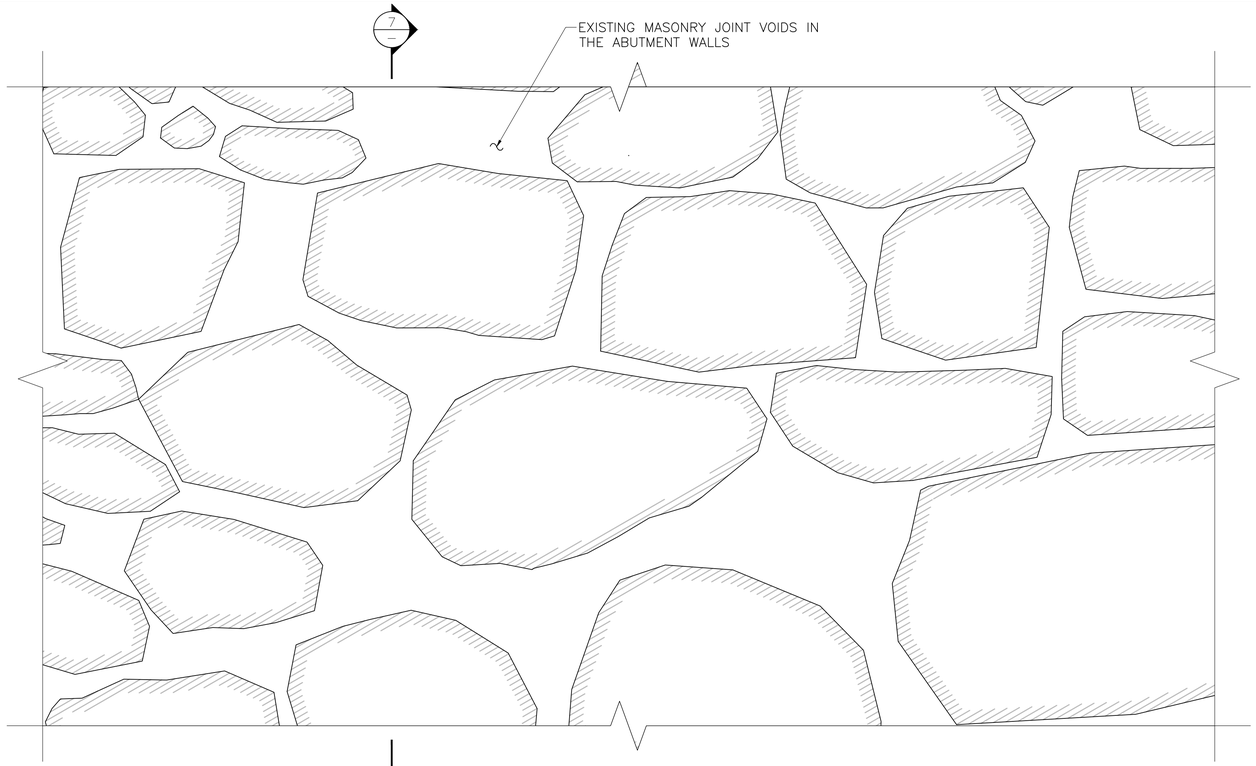
COMMONWEALTH OF MASSACHUSETTS
DANIEL S. CROVO
NO. 35441
CIVIL
REGISTERED PROFESSIONAL ENGINEER
5/1/2025

SUBSTRUCTURE REPAIR

TOWN OF EASTON

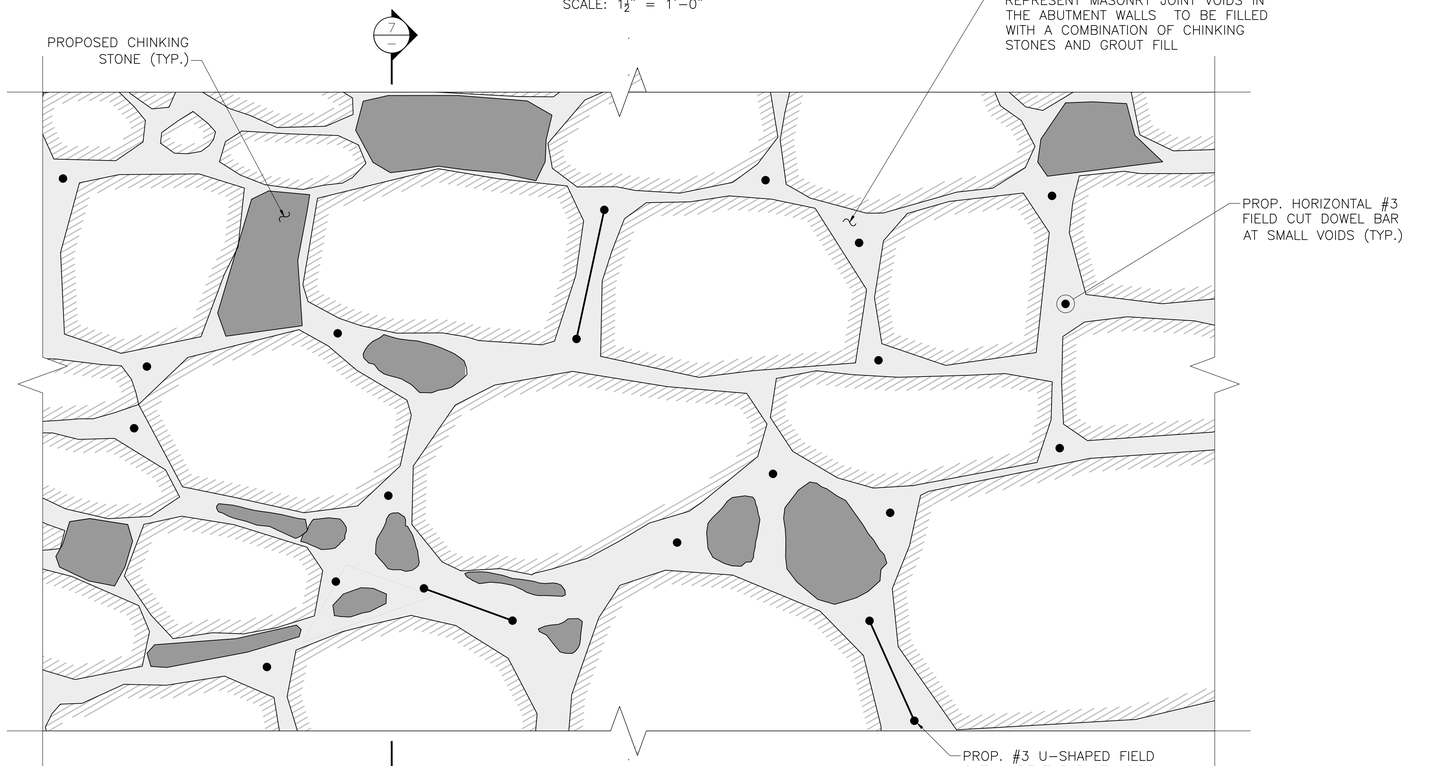
SUBSTRUCTURE REPAIR FOR EASTON E-06-022 (94W)
MAIN STREET OVER QUESET BROOK

PROPOSED CONDITIONS



EXISTING PARTIAL ABUTMENT ELEVATION

SCALE: 1½" = 1'-0"

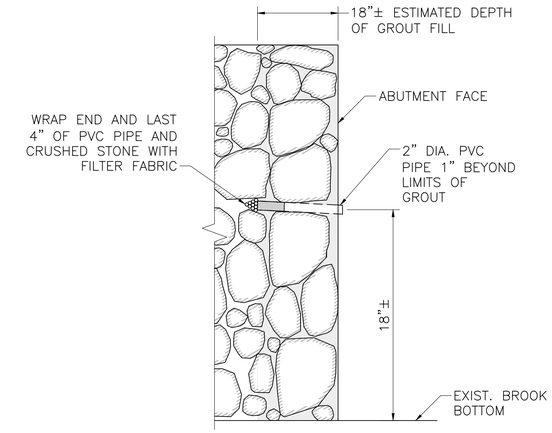

7
PROPOSED CHINKING STONE (TYP.)
LIGHT GREY SHADED AREAS REPRESENT MASONRY JOINT VOIDS IN THE ABUTMENT WALLS TO BE FILLED WITH A COMBINATION OF CHINKING STONES AND GROUT FILL
PROP. HORIZONTAL #3 FIELD CUT DOWEL BAR AT SMALL VOIDS (TYP.)
PROP. #3 U-SHAPED FIELD CUT & BENT BAR AT VOIDS LARGE ENOUGH TO FIT (TYP.)

PROPOSED PARTIAL ABUTMENT ELEVATION

SCALE: 1½" = 1'-0"

NOTES:

1. THE EXISTING ARRANGEMENT OF DRY LAID UNDRESSED MASONRY COMPRISING THE ABUTMENT WALLS IS RANDOM, WITH LARGE AREAS OF OPEN VOIDS, OR MISSING STONES.
2. #3 REBAR SHALL BE FIELD CUT AND BENT TO MATCH INSTALLATION CONDITIONS.
3. IN AREAS WHERE VOIDS ARE TO BE REINFORCED, THE REBAR SHALL BE INSTALLED BY TEMPORARILY SECURING IN PLACE.
4. TEMPORARY REBAR SECURING DEVICES SHALL BE CONTRACTOR DESIGNED, AND SHALL NOT DAMAGE THE EXISTING MASONRY.
5. WEEP HOLES SHALL BE PLACED IN MASONRY BRIDGE ABUTMENTS AND WINGWALLS WITH A MAXIMUM SPACING OF 5'-0" ON CENTER FOR EACH ABUTMENT AND SOUTH WINGWALLS.


18"± ESTIMATED DEPTH OF GROUT FILL
ABUTMENT FACE
WRAP END AND LAST 4" OF PVC PIPE AND CRUSHED STONE WITH FILTER FABRIC
2" DIA. PVC PIPE 1" BEYOND LIMITS OF GROUT
18"±
EXIST. BROOK BOTTOM

WEEP HOLE SECTION

SCALE: ¾" = 1'-0"

RECOMMENDED WEEP HOLE INSTALLATION SEQUENCE:

1. COMPLETE CEMENTITIOUS GROUT FILL AND CHINKING STONE STRENGTHENING OF ABUTMENT WALLS.
2. LAYOUT WEEP HOLE LOCATIONS SUCH THAT THEY PENETRATE ABUTMENT WALLS THRU GROUT (NOT A STONE).
3. CORE DRILL 3" DIAMETER (MAX.) HOLE THRU GROUTED ABUTMENT WALLS.
4. VERIFY THAT CORED HOLE DEPTH EXTENDS BEYOND GROUT LIMITS.
5. ADD CRUSHED STONE WRAPPED IN FILTER FABRIC AT INTERIOR END OF CORED HOLE.
6. COVER INTERIOR END AND FIRST 4" OF PVC PIPE WITH GEOSYNTHETIC FILTER FABRIC.
7. SECURE WEEP HOLE PIPE BY GROUTING ANNULAR SPACE BETWEEN PIPE AND CORED HOLE.

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
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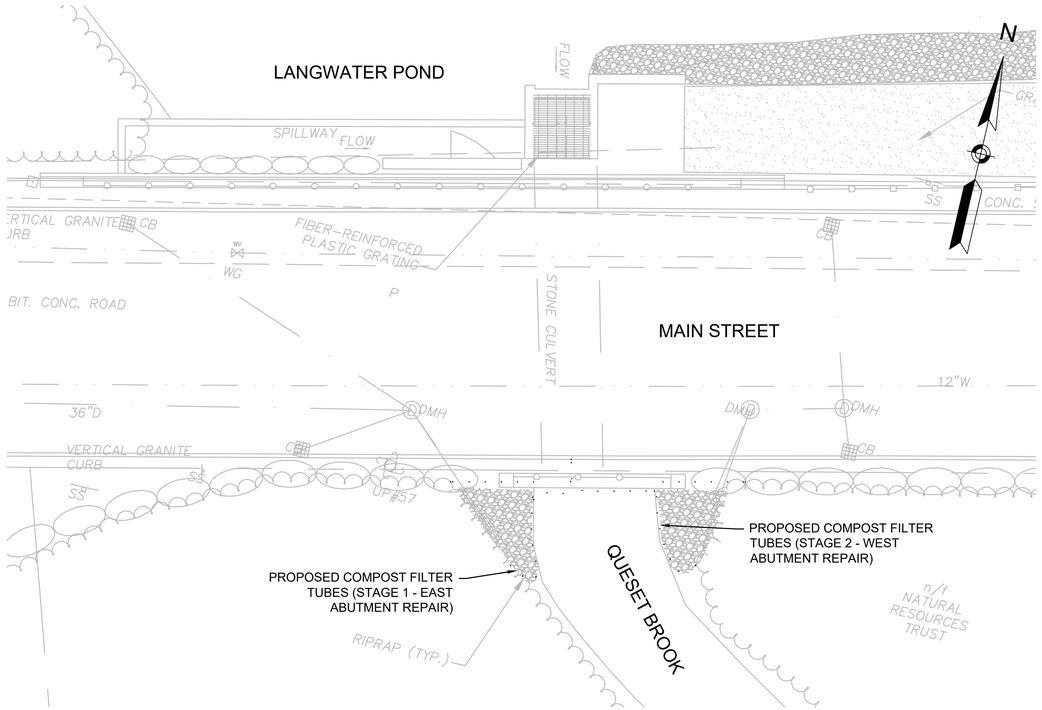
5/1/2025

SUBSTRUCTURE REPAIR

TOWN OF EASTON

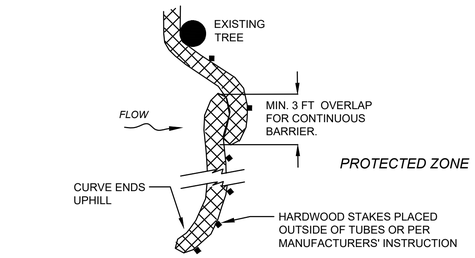
SUBSTRUCTURE REPAIR FOR EASTON E-06-022 (94W)
MAIN STREET OVER QUESET BROOK

JOINT REPAIR DETAILS



PLAN VIEW

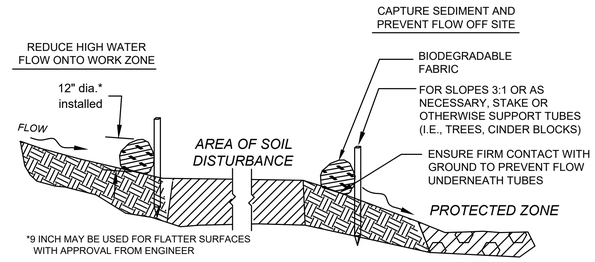
SCALE: 1" = 10'


EXISTING TREE
FLOW
MIN. 3 FT OVERLAP FOR CONTINUOUS BARRIER.
PROTECTED ZONE
CURVE ENDS UPHILL
HARDWOOD STAKES PLACED OUTSIDE OF TUBES OR PER MANUFACTURERS' INSTRUCTION

PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLAN VIEW


CAPTURE SEDIMENT AND PREVENT FLOW OFF SITE
REDUCE HIGH WATER FLOW ONTO WORK ZONE
BIODEGRADABLE FABRIC
12" dia.* installed
FOR SLOPES 3:1 OR AS NECESSARY, STAKE OR OTHERWISE SUPPORT TUBES (I.E., TREES, CINDER BLOCKS)
FLOW
AREA OF SOIL DISTURBANCE
ENSURE FIRM CONTACT WITH GROUND TO PREVENT FLOW UNDERNEATH TUBES
PROTECTED ZONE

*9 INCH MAY BE USED FOR FLATTER SURFACES WITH APPROVAL FROM ENGINEER

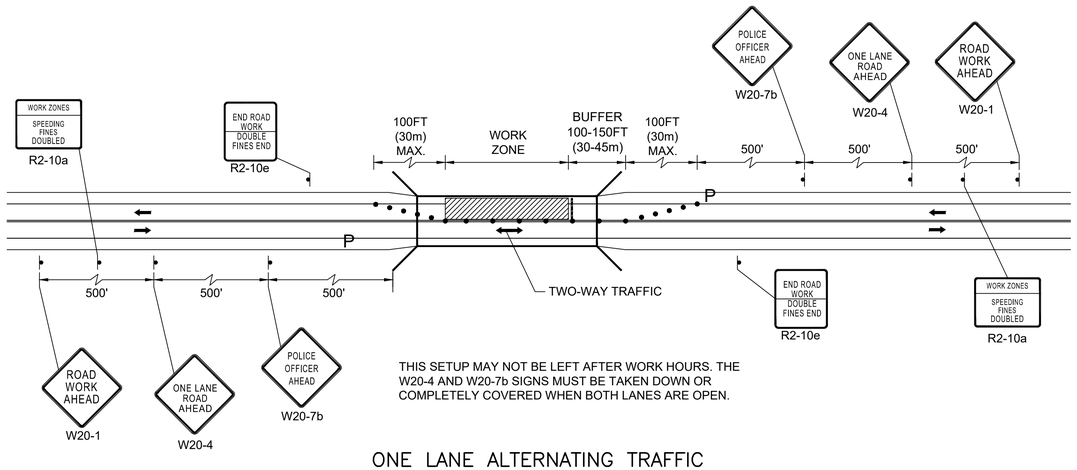
SECTION

SEDIMENT BARRIER – COMPOST FILTER TUBE

NOT TO SCALE

COMPOST FILTER TUBE NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
4. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.



THIS SETUP MAY NOT BE LEFT AFTER WORK HOURS. THE W20-4 AND W20-7b SIGNS MUST BE TAKEN DOWN OR COMPLETELY COVERED WHEN BOTH LANES ARE OPEN.

ONE LANE ALTERNATING TRAFFIC

NOT TO SCALE

NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS. FOR ADDITIONAL DETAILS SEE SPECIAL PROVISION ITEM 850.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
6. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING WARNING LIGHTS.
7. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
8. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
9. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS.
10. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

LEGEND:

- DIRECTION OF TRAFFIC
- SIGN
- P POLICE DETAIL
- REFLECTORIZED DRUM OR CONE

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GILL ENGINEERING

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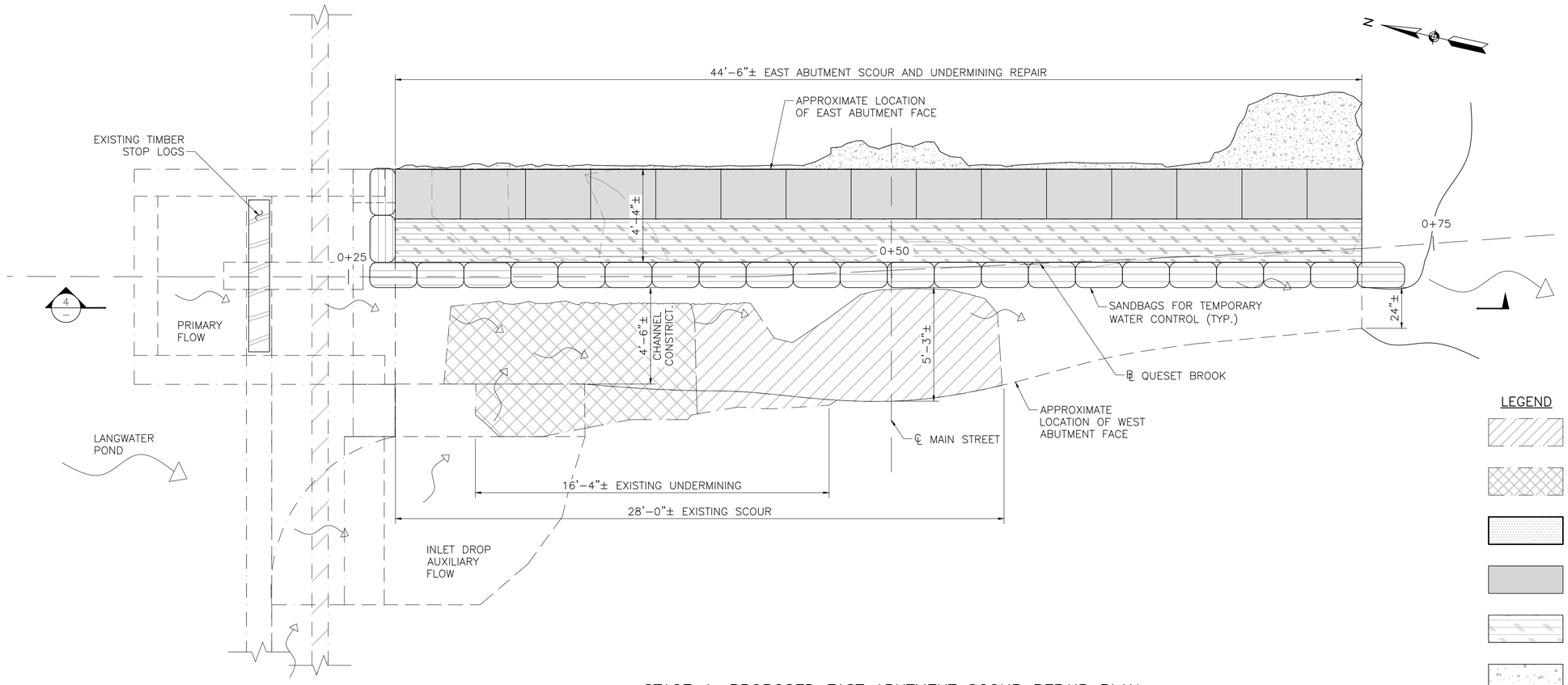
REGISTERED PROFESSIONAL ENGINEER

SUBSTRUCTURE REPAIR
TOWN OF EASTON

SUBSTRUCTURE REPAIR FOR EASTON E-06-022 (94W)
MAIN STREET OVER QUESET BROOK

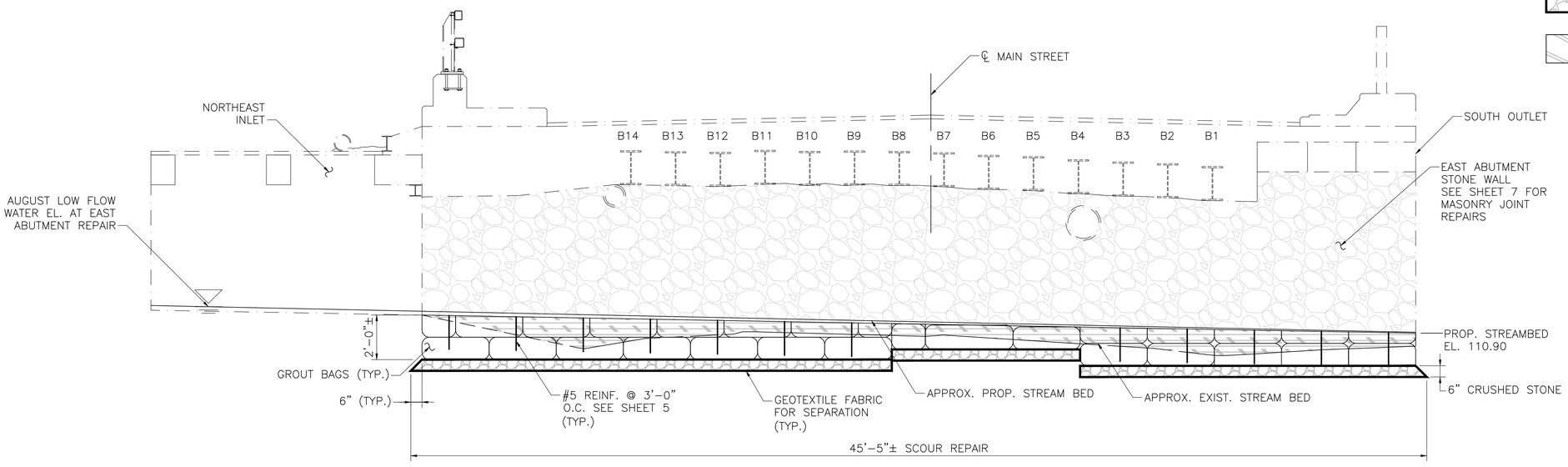
CONSTRUCTION DETAILS

SHEET 8 OF 8



STAGE 1: PROPOSED EAST ABUTMENT SCOUR REPAIR PLAN

SCALE: $\frac{3}{8}$" = 1'–0"


℄ MAIN STREET
NORTHEAST INLET
B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1
SOUTH OUTLET
EAST ABUTMENT STONE WALL SEE SHEET 7 FOR MASONRY JOINT REPAIRS
AUGUST LOW FLOW WATER EL. AT EAST ABUTMENT REPAIR
2'–0"±
PROP. STREAMBED EL. 110.90
GROUT BAGS (TYP.)
6" (TYP.)
#5 REINF. @ 3'–0" O.C. SEE SHEET 5 (TYP.)
GEOTEXTILE FABRIC FOR SEPARATION (TYP.)
APPROX. PROP. STREAM BED
APPROX. EXIST. STREAM BED
6" CRUSHED STONE
45'–5"± SCOUR REPAIR

SECTION 4: PROPOSED EAST ABUTMENT SCOUR REPAIRS

SCALE: $\frac{3}{8}$" = 1'–0"

REPAIR PLAN NOTES:

1. UTILITY PIPES AND HEADER BEAMS NOT SHOWN FOR CLARITY.
2. TEMPORARY CONTROL OF WATER SYSTEM SHOWN IS CONCEPTUAL. CONTRACTOR SHALL DEVELOP HIS/HER SYSTEM OF CONTROL OF WATER AND SUBMIT FOR APPROVAL.
3. EXISTING UNDERWATER INSPECTION REPORTS INDICATE THAT THERE ARE EXISTING TIMBER BEAMS ON THE MUDLINE THAT SUPPORT THE ABUTMENTS. THESE BEAMS RUN PERPENDICULAR TO THE ABUTMENTS AND ARE SPACED AT 3.5 FEET ON CENTER. SOME OF THE BEAMS ON THE WEST SIDE OF THE CHANNEL ARE UNDERMINED.

LEGEND

- DENOTES EXISTING CHANNEL SCOUR LESS THAN 1 FOOT
- DENOTES EXISTING CHANNEL SCOUR DEEPER THAN 1 FOOT
- DENOTES EXISTING UNDERMINING OF ABUTMENTS – LIMITS APPROXIMATE
- DENOTES PROPOSED FABRIC BAGS FILLED WITH GROUT WITH ANTI–WASHOUT ADMIXTURE AT ABUTMENT FACE
- DENOTES PROPOSED SCOUR REPAIRED USING FABRIC BAGS FILLED WITH GROUT WITH ANTI–WASHOUT ADMIXTURE
- DENOTES PROPOSED UNDERMINING REPAIRED USING FABRIC BAGS FILLED WITH GROUT WITH ANTI–WASHOUT ADMIXTURE
- DENOTES TEMPORARY WATER CONTROL SYSTEM
- DENOTES PROPOSED 6" OF CRUSHED STONE WITH GEOTEXTILE FABRIC FOR SEPARATION
- DENOTES EXISTING TIMBER STOP LOGS

IMPACT QUANTITIES:

CRUSHED STONE:	190 SF, 4 CY
GROUT BAGS:	420 SF, 30 CY

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
APPROVED UNDER PROVISIONS OF MASS. GEN. LAWS CH 85 S 35

DISTRICT BRIDGE ENGINEER — DATE

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11/13/2025	NIN	NIN	DSC	SHEET 8A REVISED

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SUBSTRUCTURE REPAIR

TOWN OF EASTON

SUBSTRUCTURE REPAIR FOR EASTON E–06–022 (94W)
MAIN STREET OVER QUESET BROOK

SCOUR REPAIR EAST ABUTMENT – REVISED

SHEET 8A OF 8

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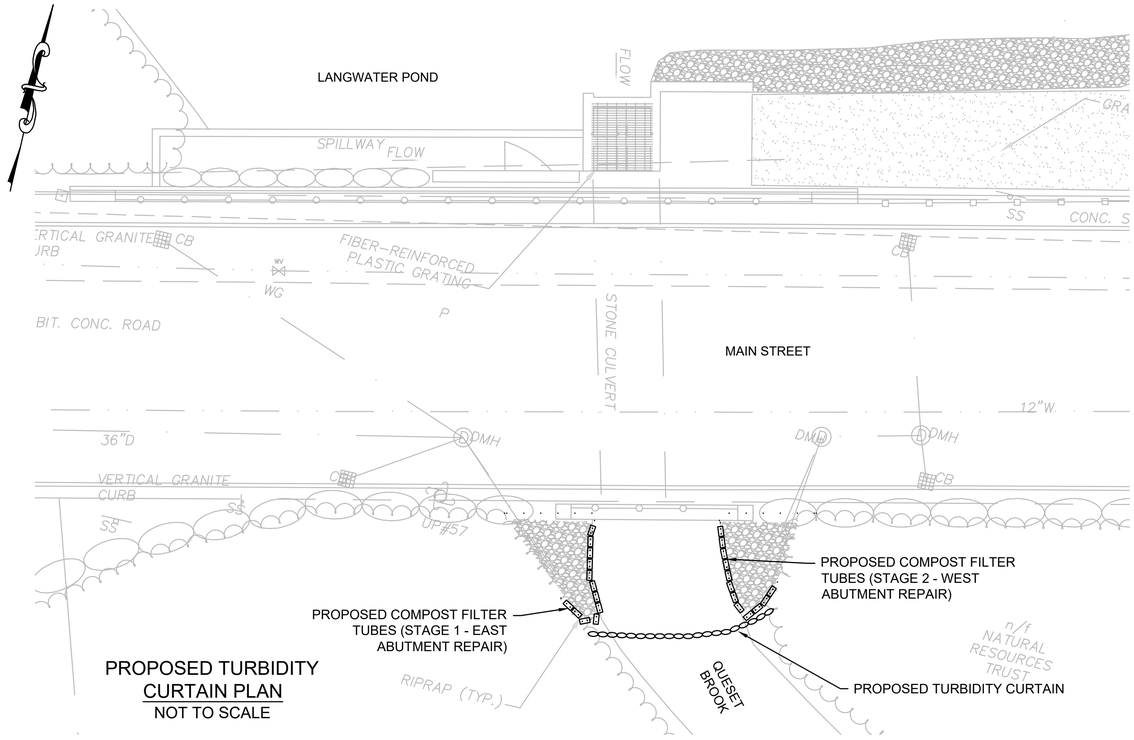
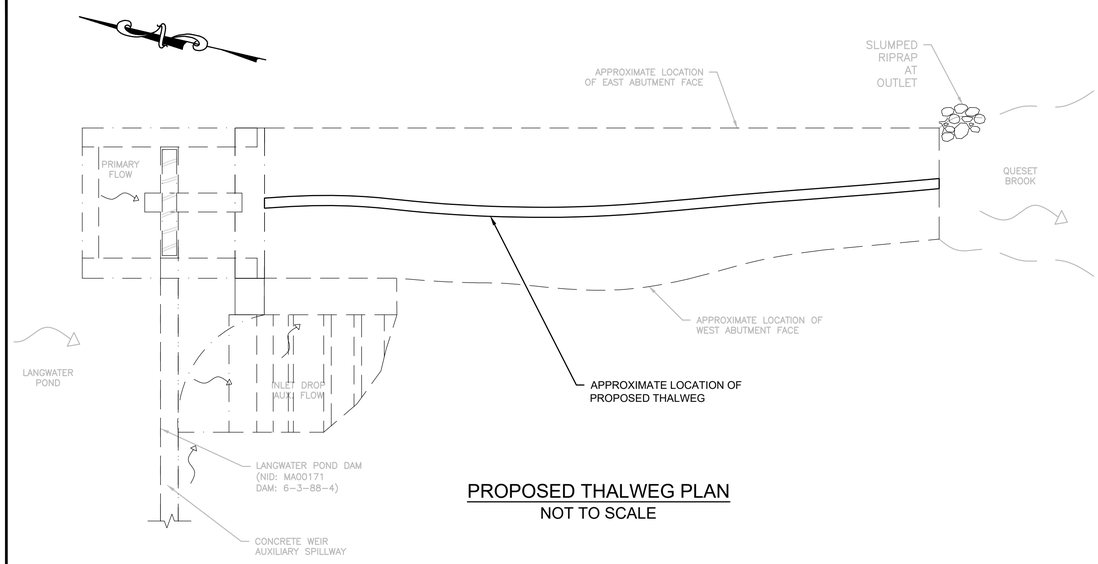


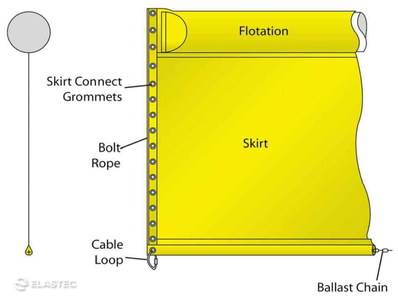
PROPOSED TURBIDITY CURTAIN PLAN
NOT TO SCALE



PROPOSED THALWEG PLAN
NOT TO SCALE

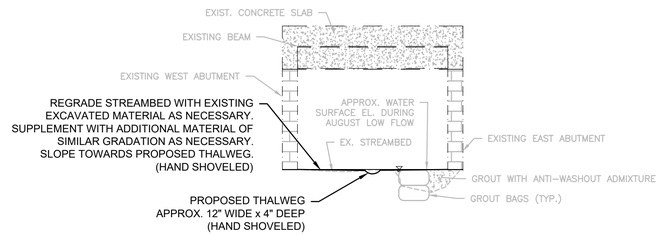
SCALE:	NO SCALE
DATE:	NOV. 2025
DRAWN BY:	MAG
CHECKED BY:	

TYPICAL PLANS AND DETAILS



TYPICAL TURBIDITY CURTAIN DETAIL
NOT TO SCALE

CONSERVATION NOTES:
1. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING WITH THE CONSERVATION COMMISSION AND OWNER TO REVIEW THE ORDER OF CONDITIONS ISSUED FOR THE PROJECT.
2. PRIOR TO THE START OF WORK, THE SEDIMENT CONTROLS SHALL BE STAKED, INSTALLED AND REVIEWED BY THE CONSERVATION COMMISSION.
3. ALL SEDIMENTATION BARRIERS SHALL BE MAINTAINED IN GOOD REPAIR UNTIL ALL DISTURBED AREAS HAVE BEEN FULLY STABILIZED AS APPROVE THE CONSERVATION COMMISSION. EROSION CONTROLS SHALL BE INSPECTED ON A DAILY BASIS AND ACCUMULATED SEDIMENTS REMOVED AS NEEDED.
4. A MASSDEP SIGN NOT LESS THAN TWO SQUARE FEET OR MORE THAN THREE SQUARE FEET SHALL BE POSTED AT THE SITE. THE SIGN SHALL BEAR THE WORDS "MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION" [OR "MASSDEP"], AND THE FILE NUMBER ISSUED FOR THE PROJECT.


EXIST. CONCRETE SLAB
EXISTING BEAM
EXISTING WEST ABUTMENT
REGRADE STREAMBED WITH EXISTING EXCAVATED MATERIAL AS NECESSARY. SUPPLEMENT WITH ADDITIONAL MATERIAL OF SIMILAR GRADATION AS NECESSARY. SLOPE TOWARDS PROPOSED THALWEG. (HAND SHOVELED)
APPROX. WATER SURFACE EL. DURING AUGUST LOW FLOW
EX. STREAMBED
EXISTING EAST ABUTMENT
GROUT WITH ANTI-WASHOUT ADMIXTURE
GROUT BAGS (TYP.)
PROPOSED THALWEG APPROX. 12" WIDE x 4" DEEP (HAND SHOVELED)

TYPICAL THALWEG DETAIL
NOT TO SCALE

DRAFT

SUBSTRUCTURE REPAIR FOR EASTON E006-022
MAIN STREET OVER QUESET BROOK
EASTON, MA

DEPARTMENT OF PUBLIC WORKS
130 CENTER STREET
EASTON, MA